Elsevier's Response: Request for Information on the NIH Plan to Enhance Public Access to the Results of NIH-Supported Research

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Elsevier helps researchers and healthcare professionals to advance science and improve health outcomes by combining quality information and data sets with analytical tools to facilitate insights and critical decision-making. We enable researchers to disseminate their scientific findings through our more than 2,800 journals, applying tools and services, as well as coordinating editorial and peer review assessment in collaboration with 32,000 editors and almost 1.4 million reviewers each year, to ensure the integrity and quality of the research we publish.

Elsevier welcomes the opportunity to work alongside the White House Office of Science & Technology (OSTP), NIH and other federal agencies, and the research community, to advance open science, including through open access publishing. Elsevier seeks to advance the recommendations of the Public Access Memo issued by OSTP via mechanisms that are durable and sustainable for the entire research community. We endorse approaches that realize the clear benefits of widening public access while avoiding unintended consequences. Specifically, we applaud NIH's focus on equity and reiterate our willingness to share our experience and insights to support NIH with achieving equitable publishing opportunity and impact for all its grantees. Critically, we must work together to pursue models that safeguard the impact, quality, discoverability, and accessibility of research.

We appreciate your consideration of our comments at this critical juncture as NIH seeks to expand its public access policy, centered on our shared commitment to quality, trust and equity. We look forward to collaborating with NIH and other stakeholders as we lay the foundations for how to best address the emerging global societal challenges of our times.

1. How to best ensure equity in publication opportunities for NIH-supported investigators.

Elsevier shares the White House Office of Science and Technology Policy's (OSTP's) and NIH's goals of ensuring the wide availability of trustworthy and impactful research findings, as well as equity in publication opportunities for NIH-supported investigators. At Elsevier, we look forward to working collaboratively with NIH and other key stakeholders to achieve these goals principally via the gold open access model. With support from NIH, we believe this will best ensure equity in publication opportunities for all.

We recognize that there is currently no 'one-size fits all' publication model that meets all the diverse needs, preferences and circumstances of authors, institutions, funders in the US or indeed globally. This is why we have long offered both the gold open access, or pay-to-publish, model as well as the subscription, or pay-to-read, model, so that institutions and authors can choose the right route for them depending on their funding environment, discipline, and research goals. We therefore respect – and generally reflect – NIH's agnostic stance in its draft policy as to publication model, we understand the need for choice, and we support free market dynamics to sustainably achieve shared objectives on public access.

Consistent with the above principles, we agree that publicly funded research outputs should be publicly accessible. We fully support and enable researchers to freely and immediately share research outputs that have not benefitted from publishers' investments – for example, datasets and

preprints. Where, under the terms of NIH's draft public access policy, researchers will be required by NIH to make peer-reviewed article versions immediately available, and asked to retain copyright, we will enable this through the gold open access (pay-to-publish) model.

Gold open access is a well-established and sustainable mechanism that ensures publishers are recompensed for the substantial value-added investments they make in these versions. These cover services that we and other publishers provide, which include ensuring the quality, discoverability, and accessibility of research in perpetuity, safeguarding the integrity of published research by effectively managing editorial and peer review processes, and applying innovative technology towards continually expanding and enhancing all these services. Additionally, Elsevier is increasingly playing a critical role in tackling misinformation and fraud of unprecedented scale in science, as we validate the rigor of the research we publish in our journals. Sustainable funding models are vital if publishers are to continue providing these services to safeguard trust in science into the future, and for us to reinvest and innovate in a range of areas – including the examples related to equity outlined under question 2 – to advance knowledge for society in the long term. Commensurately, we are committed to providing researchers with value for money in relation to our services, and to pricing fairly and transparently – themes we explore further under question 3.

We are supportive of choice and flexibility. Different publishers will provide different choices, services and business models. We will be unable to support publication models which rely on subscription-funded content being made freely and immediately accessible, and which also include requirements for authors to retain copyright via 'rights-retention'-like strategies, as we believe these models will prove unsustainable in the long-term. These measures do not provide a mechanism to recover our investments that enable us to continue innovating and ultimately providing value for NIH and the public. This position is shared by the vast majority of journals and publishers.

We therefore welcome that NIH's draft policy enables researchers to charge reasonable costs for publishing gold open access against their awards. Availability and take up of this funding will be critical for grantees to be able to comply with NIH's immediacy policy across the full spectrum of available journals, so they are supported to publish in the journal that will provide the best visibility for their research. This will meet NIH's goal for equitable publication opportunities: without funding, grantees seeking to comply with NIH's policy would only be able to publish in journals that allow researchers to immediately share research they publish under the subscription model (just 4% of Health Science journals according to recent research published by JISC), or that offer free open access publishing (8% of total articles across all subject areas were published in diamond journals based on 2021 Scopus data), which may be lower quality journals and regionally or institutionally focused titles.

Furthermore, to ensure equity in publication opportunities for all NIH-supported investigators, we suggest that all grantees should be provided with clear and consistent guidance on budgeting for the full cost of disseminating their research, and funds for publication should remain available after the end of the grant period. In so doing, all grantees will be afforded the same benefits of gold open access, including increased readership to maximize the reach of their work, a policy goal shared by NIH and OSTP.

There is much we can learn from other markets as we work together to achieve the goals of OSTP's memo for immediate open access. The gold open access model is already widely adopted by the research community and successfully implemented across various countries. These include research-intensive countries such as the UK, Germany, Italy, Spain, Poland, and the Netherlands, where so-called 'combined' or 'read and publish' agreements with publishers have contributed to achieving

immediate access to research through gold open access. All stakeholders have a role to play in developing solutions to enable gold open access in practice. At Elsevier, we draw on our experiences of co-creating agreements that already enable gold open access publishing across more than 2,100 institutions globally.

Finally, consistent with our commitment to evolving publishing practices, we welcome innovation in the marketplace. As publishers, we will continue to analyze, monitor and experiment with different publication models to ensure that we are serving our diverse communities as effectively as possible. Notwithstanding, we have a responsibility to science and society to ensure that any approaches we endorse safeguard integrity, quality, discoverability, and accessibility of research in perpetuity. Thinking pragmatically about already proven mechanisms to support the OSTP's and NIH's policy goals for immediate public access, and acknowledging the limited time available to develop scalable solutions, at Elsevier we will therefore support the gold open access, pay-to-publish, model. This does not preclude continued experimentation to understand different publication models, or flexibility to test new models over time, in line with our long-standing tradition of working creatively with and for the scientific community to advance scientific knowledge sharing for the benefit of science and society.

Finding a solution that meets all OSTP's policy objectives, including equity, requires a collaborative and cooperative approach. We are committed to working with the research community, including NIH, towards finding workable solutions that will achieve these objectives for all.

2. Steps for improving equity in access and accessibility of publications.

We share OSTP's Equity and Excellence Vision and would welcome opportunities to collaborate with NIH and others in the research community to leverage our equity work and to exchange insights and experience, towards our shared ambitions for helping both individuals and science to achieve their full potential.

As outlined in our response to point 1, at Elsevier, we will enable NIH's grantees to meet its policy goals, and fully support equity in access, by offering the gold open access model, which is a well-established mechanism to achieve access, integrity, and quality at scale. With measures in place to ensure consistent guidance for all grantees on budgeting for the full cost of gold open access publication, equity can be safeguarded.

As discussed above, there is currently no one-size-fits all model that will best resolve all issues in relation to equity. Ultimately, there are trade-offs to consider between equity in access and equity in the ability to publish. We've done much to address inequities in the pay-to-read or subscription model. We have a range of initiatives in place to provide access to subscription content, which are made possible in part through the revenue generated by our sustainable publishing models. These include: our participation in Research4Life through which we provide free or discounted reading and publishing to researchers in over 120 low- and middle-income countries; providing free access to health-related articles for patients and caregivers and establishing dedicated emergency resource and information centers, most recently for the novel coronavirus (COVID-19) and Mpox; supporting authors to share their publications peer-to-peer; and supporting interlibrary loans. Unfortunately, an open access world presents new kinds of inequities, and we are now working to develop solutions to mitigate these. These include: our vast programs of waivers/discounts on publishing, where appropriate; our work with institutions to fairly and equitably transition costs for reading to publishing as part of commercial agreements so institutions can fund publishing; and our piloting of new commercial models to address issues of equity head on. By way of an example, our pilot with California Digital Library works to meet gaps in funding for publication fees in an equitable manner.

We understand that mitigating inequities in the global research community requires that we look beyond publication models, and we have therefore undertaken a range of actions to identify issues and develop solutions towards equity in research. We have done this both as an individual publisher, supported by our I&D Advisory Board, and as a sector via the Joint Commitment for Action on Inclusion and Diversity in Publishing. We work with our editors and reviewers, and the broader publishing community, to nurture inclusion and diversity, to widen participation in journals at all levels, and to ensure that researchers' work is assessed fairly on its scientific merits. We also employ innovative approaches, such as Registered Reports and Results Masked Review, to ensure research is judged on the merits of the research question and methodology. This aims to minimize the risk of publishing bias and supports accessibility to all federally funded research output, not only that which delivers a positive result.

With regards to accessibility, our accessibility policy ensures that we consistently and proactively endeavor to make our products fully accessible to all users, regardless of physical abilities. We are thrilled that the 2023 WebAIM million report ranks ScienceDirect as the #1 most accessible home page on the internet, ensuring an optimized experience for individuals with disabilities and impairments. This incredible achievement is supported in part through the insights from a collaborative working group we have convened since 2011 comprising university leaders in assistive technology and web accessibility from six US institutes.

We are also proud to support health equity, and as part of recent additions to our 3D platform, Complete Anatomy, we have introduced a full female model, and a range of skin tones and facial feature options. These enhancements allow educators to visualize, edit and teach anatomy from diverse perspectives.

These activities all require substantial investments. At Elsevier, we will continue to make a wide range of research outputs more accessible to a greater group of potential readers, to help researchers' work achieve the greatest impact, and to help advance research progress and efficiency so that funders such as NIH can maximize the value of their investment in research. We would welcome discussing these ideas and collaborating on further initiatives with NIH regarding both accessibility and initiatives or models for equitable access to content and publishing.

3. Methods for monitoring evolving costs and impacts on affected communities.

Feedback from researchers demonstrates that they value the publishing process and feel that the work we do has a material impact. We are heartened that 90% of researchers tell us the changes made by our journals' teams to their articles improved the clarity of their research. We want to continue to serve the research community by maintaining and building on this work, which is why we will continue to seek researchers' input on how we can improve our services and their experiences with us.

We strive to offer researchers real value, and we are continuing our commitment to pricing our journals competitively with an underlying principle of pricing lower than the market for like-for-like quality.

Moreover, we follow this pricing principle even though our commitment to quality means we must invest resources to assess many more articles than we eventually publish. Elsevier journal articles account for around 18% of global research output and 28% of citations, further demonstrating our commitment to quality, significantly ahead of the industry average. We further recognize the importance of providing the research community with transparent and straightforward information about our journals and pricing on our public-facing pages, to help them make data-led decisions. As

a responsible business we take care to ensure we work within the parameters permitted by law, and to a degree that avoids market alignment, that would otherwise risk disadvantaging customers.

Key demonstrations of this commitment include:

- Our pricing policy page, covering the components that factor into our pricing, details of our strict no double dipping policy, and links to our subscription and APC list prices.
- Sharing journal-level metrics for many of our journals, including acceptance rates, and average review and publication times, via Journal Insights pages (example) and our Journal Finder tool.
- Analysis of our publishing volumes under subscription and open access business models for individual journals (example) and the whole of Elsevier.

We hold ourselves accountable for continuing to build on this transparency across the more than 2,800 journals we publish. We welcome views and will continue to ask for feedback from the research community, including partners such as NIH, as we enhance this offering, to provide helpful and meaningful insights to the communities that we serve.

4. Early input on considerations to increase findability and transparency of research.

We support NIH's goals to increase the discoverability and transparency of research. Below are examples of platforms and initiatives that we provide to enable these. We welcome further dialogue and collaboration with partners in the research community, including NIH, to continue to build on this work.

Improving research discovery via our ScienceDirect platform

All the content Elsevier publishes, including both journals and books content, is hosted on the ScienceDirect platform. ScienceDirect is completely free to search and browse in a number of ways; it serves around 50 million unique monthly users of which over 60% are not institutional customers, demonstrating that its use extends far beyond subscribers. Key elements of an article published under the pay-to-read model are available to all readers irrespective of their access status e.g., the abstract and reference list. The introduction and 'section snippets' are in the process of being rolled out across all articles. All readers are further signposted to related relevant articles to help them continue their search and deepen their understanding of a particular topic. Furthermore, our dedicated Topic pages support researchers with gaining easily digestible introductions to new subjects, drawing from subject matter expert insights, and content highlights from our foundational resources.

Enabling and encouraging transparent research data sharing

Transparent sharing of the data underlying research output enables research to be validated, supporting the quality and integrity of research. Data sharing also promotes greater reuse of research outputs, supporting research efficiency, reproducibility and maximizing the value of funders' investments by avoiding duplication of efforts and engendering new discoveries and research developments beyond the scope of the original study. This ultimately brings benefits for wider society and helps build trust in science.

We are committed to collaborating with stakeholders from across the research community, and to playing our role in enhancing data sharing practices to support and enable researchers and institutions to store, share, discover and effectively (re-)use data. At Elsevier we provide infrastructure and workflows in support of this: our research data management solutions support the end-to-end research data management workflow, from providing Mendeley Data, an NIH

Generalist Repository Ecosystem Initiative (GREI) supported open and free generalist repository, to Data Monitor, which enables institutions, and ultimately funders, to track and monitor compliance with data sharing mandates. During our submission process we prompt and enable authors to share links to their datasets, made available in a repository of their choice, and to provide data availability statements in their publication.

Surfacing metadata fields and persistent identifiers

Elsevier surfaces metadata fields and persistent identifiers (PIDs) to support discoverability, access, and compliance monitoring by research institutes and funders. We are actively participating in community discussions and initiatives on these topics, such as those led by the Open Research Funders Group. We would welcome further discussion with NIH and other stakeholders on ways to improve on discoverability and transparency of research.

We already open a number of metadata fields for articles and their references within Crossref. In terms of identifiers, we use industry standards, such as article DOI and Fundref, and where there are a range of identifiers in use across the industry, we enable interoperability, for example, users can import their Scopus profiles into ORCID or link ORCID identifiers to Scopus profiles.

Nurturing research integrity

The OSTP memo pointed to the role that metadata and PIDs can play in nurturing research integrity. We thus wish to highlight the broader role that publishers, including Elsevier, and learned societies play to ensure research integrity throughout all stages of submission and publication so that researchers and readers are assured of the quality and trustworthiness of research outputs. We do this by: screening submissions for integrity issues; carefully managing the editorial and peer review process; supporting authors to develop and share transparency statements which are published alongside the published manuscript; and maintaining the integrity of the scholarly record through post-publication updates. We develop screening tools ourselves, as well as contribute to industry-wide approaches to nurture research integrity, for example via the STM Association's Integrity Hub.

As you would expect, in all these aspects we seek to maintain the highest industry standards and best practice, as developed and maintained by the Committee on Publication Ethics (COPE), International Committee of Medical Journal Editors (ICMJE) and the like. We are keen to share our learnings and would welcome further dialogue with NIH and stakeholders regarding transparency and integrity of research.

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